

CLAIMS

1. A frame over which woven wire mesh is to be stretched and secured to form a sieving screen which can be used to screen solids from drilling mud recovered from down-hole when drilling for oil or gas comprising a rectilinear moulded plastics frame having edge regions by which it is secured in place in a shaker and defining a plurality of rectilinear windows formed by an orthogonal array of intersecting ribs also of moulded plastics material at least some of which are internally reinforced by a structure comprising two spaced apart layers of orthogonal intersecting spaced apart wires, running parallel to the length and breadth of the rectilinear shape of the frame within the ribs to increase their rigidity, wherein:-

- 1) the edge regions of the frame are reinforced internally by metal box-section members joined at their four corners and defining a perimeter reinforcement and
- 2) the ends of the wires are secured to the box-section members.

2. A frame as claimed in claim 1 wherein the box-section members are encapsulated in the same plastics material from which the orthogonal array of intersecting ribs are moulded.

3. A frame as claimed in claim 1 or 2 wherein alternate ribs are not reinforced with wires.

4. A frame as claimed in claim 3 wherein the non-reinforced ribs only extend partway between the upper and lower faces of the frame.

5. A frame as claimed in any of claims 1 to 4 wherein lengths of wire bent to form spacers and adapted to fit between upper and lower wires of the rib reinforcing structure are joined to the upper and lower wires so as to extend therebetween and maintain the desired separation of the two layers of wires during the plastics encapsulation/moulding process.

6. A frame as claimed in claim 5 wherein the spacers are welded to the wires.
7. A frame as claimed in claim 5 or 6 wherein the spacers are wholly contained within the plastics material which form the ribs.
8. A frame as claimed in any of claims 1 to 7 wherein the box-section members of the perimeter reinforcement have a square or rectangular cross section.
9. A frame as claimed in any of claims 1 to 8 wherein the ends of the two layers of wires are secured to the upper and lower faces of the perimeter reinforcement.
10. A framework for reinforcing a frame of plastics material over which woven wire mesh is to be tension and bonded to form a sieving screen, comprising two spaced apart layers of orthogonal intersecting spaced apart wires running parallel to the length and breadth of the rectilinear shape of the frame, and a rectilinear bounding sub-frame of metal box section members joined at their four corners to which the ends of the wires are secured.
11. A framework as claimed in claim 10 wherein, the ends of the wires in one layer are secured to the upper face of the sub-frame members and the ends of the wires in the other layer are secured to the underside of the sub frame members.
12. A screen constructed from a frame as claimed in any of claims 1 to 9 and at least one layer of woven wire stretched over and secured to the upper surface of the frame so that tension is maintained in the wire cloth at the end of the manufacturing process.
13. A screen as claimed in claim 12 when fitted in a shaker wherein the screen is clamped in position in a shaker basket using a pneumatic seal or by wedges driven into position between abutments protruding internally from the shaker basket and the upper face of edge regions of the screen.

14. Frameworks for reinforcing GRP moulded screen frames constructed as herein described and with reference to the accompanying drawings.